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ELEVATION ADJUSTING DEVICE OF AUXILIARY TABLE PLATE

FIELD OF THE INVENTION

5 The present invention relates to table devices, and particular to an elevation adjusting device of an auxiliary table plate, wherein the auxiliary table plate is movable freely by rotation thereof. Thereby, the user can adjust the position of the auxiliary table plate to a desired position.

10 BACKGROUND OF THE INVENTION

Since more and more devices are necessary to be equipped on a table, such a computer and peripherals of the computer. Thereby, the area of a table is insufficient. An auxiliary table plate is equipped to the table.

Conventionally, an auxiliary table plate is telescopically and
15 transversally connected to a main table plate. For example, a keyboard is placed on the auxiliary table plate. In use, the auxiliary table plate is pulled out from the main table plate to be out of the main table plate.

In general, the elevation of the main table plate is adjusted by using an air pressure rod. When a user seats for a long time, the user will feel
20 tired. Thereby, sometimes, the user must stand up to change pose and then works continuously. However, the elevation of the height of the main table plate is finite so as not to match the requirement of the user. Furthermore, the heights of people are different. The auxiliary table plate confined in the main table plate cannot match to the requirement of
25 the user. The user must make himself (or herself) to suit the design of

the auxiliary table plate.

SUMMARY OF THE INVENTION

Accordingly, the primary object of the present invention is to provide
5 an elevation adjusting device of an auxiliary table plate, wherein the
auxiliary table plate is movable freely by rotation thereof. Thereby, the
user can adjust the position of the auxiliary table plate to a desired
position.

To achieve above objects, the present invention provides An elevation
10 adjusting device of an auxiliary table plate includes two linkages at two
sides; one end of each linkage being connected to an auxiliary table plate;
and another end of each linkage being connected to a twisting element; the
twisting element rotating as the twisting element is driven by a telescopic
pressure pump so as to drive the linkages; thus the auxiliary table plate
15 connected to the linkages rotating to change the elevation of the auxiliary
table plate; when the pump stops, the auxiliary table plate being fixed.

The various objects and advantages of the present invention will be
more readily understood from the following detailed description when read
in conjunction with the appended drawing.

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BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows the structure of the elevation adjusting device of the
present invention.

Fig. 2 shows the operation of the elevation adjusting device of the
25 present invention.

Fig. 3 shows a further operation of the elevation adjusting device of the present invention.

Fig. 4 shows the connection of the auxiliary table plate with the linkages of the present invention.

5 Fig. 5 shows the adjustment of the elevation angle of the auxiliary table plate according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

In order that those skilled in the art can further understand the present
10 invention, a description will be described in the following in details. However, these descriptions and the appended drawings are only used to cause those skilled in the art to understand the objects, features, and characteristics of the present invention, but not to be used to confine the scope and spirit of the present invention defined in the appended claims.

15 Referring to Fig. 1, the elevation adjusting device of an auxiliary table plate of the present invention for adjusting the elevation of an auxiliary table plate or likewise objects.

With reference to Fig. 3, the elevation adjusting device of an auxiliary table plate includes two opposite linkages 20, 21. Each linkage 20, 21
20 has a respective high position linkage 20a, 21a and a low position linkage 20b, 21b. One end of each linkage 20, 21 has a first supporting frame 31, 32 for connecting to an auxiliary table plate 10 and another end of each linkage has a second supporting frame 41, 42 to be connected to a main table plate 11. The first and second supporting frames 31, 32, 41, 42
25 have L shapes. One side of the L shape serves to connect the respective

one of main and auxiliary table plates.

With reference to Figs. 4, and 5, an adapting plate 20c is connected between the high position linkage 20a and the respective low position linkage 20b. The adapting plate 20c is connected to the first supporting frame 31. A sliding hole 20d is formed in the adapting plate 20c. The sliding hole 20d has a round cambered shape so that the adapting plate 20c can be locked to the supporting frame 31 by using a stud 20e to pass through the sliding hole 20d. When the stud 20e is released, the supporting frame 31 is slidable for adjusting the elevation angle of the auxiliary table plate 10. When the orientation of the auxiliary table plate 10 has been adjusted, the stud 20e can be tightened.

The two linkages 20, 21 are connected by a twisting element 40 at one ends of the linkage 20, 21 connected to the main table plate 11. The twisting element 40 is a tube body. Two ends of the tube body are connected to the linkages 20, 21, respectively, by the second adapting plates 41, 42. Each of the second adapting plates 41, 42 is protruded with a respective guide plate 411, 421. The guide plate 411, 421 passes through a through hole 201, 211 in the linkage 20, 21. A sector screw 202, 212 serves to fix the second adapting plate 411, 421 to the linkage 20, 21.

The twisting element 40 is connected to the telescopic pressure pump 50 through two cranks 401, 402. When the pump 50 is pushed, the twisting element 40 will be driven to rotate. A telescopic rod 51 is installed within the pump. One end of the telescopic rod 51 far away from the pump 50 has a touch control panel 52. The same end of the

telescopic rod 51 is connected to a third supporting frame 54 through a third adapting plate 53. Then the third adapting plate 43 is connected to the main table plate 11. One end of the third adapting plat 53 is installed with a press plate 55. Another end of the press plate 55 is connected to a connecting rope 56. The connecting rope 56 is further connected to the auxiliary table plate 10, as shown in Fig. 10. The press plate 56 slightly touches or does not touch the touch control point 52. When the connecting rope 56 is pulled, the press plate 55 applies a force to the touch control point 52 so as to compress the touch control point 52 to induce the pump 50 to push the telescopic rod 51 outwards. Since one end of the telescopic rod 51 is fixed by the third adapting plate 53. Thereby, the pump 50 is pushed away from the main table plate 11 (as an action to adjust a gas (or oil) pressure rod) so as to drive the cranks 401, 402 to rotate the twisting element 40.

Another end of the connecting rope 56 far away from the pump 50 is connected to a control plate 60. When the control plate 60 is moved, the connecting rope 56 will be pulled. The control plate 60 is further positioned to a fourth supporting frame 61. The fourth supporting frame 61 is further connected to a bottom of the auxiliary table plate 10.

With reference to Fig. 3, it is only necessary to move the control plate 60 (in the drawing, it is moved toward the auxiliary table plate 10). Then the press plate 55 will press the touch control point 52 so as to push the pump 50 to move away from the main table plate 11. Thereby, the cranks 401, 402 will rotate the twisting element 40 so as to drive the linkages 20, 21 to rotate counterclockwise to lift the auxiliary table plate 10 upwards.

When the auxiliary table plate 10 reaches to a predetermined position. The control plate 60 will be released so that the pump will not move further and the twisting element 40 is suppressed from rotation. Then, the auxiliary table plate 10 is static and positioned by the supporting of
5 the linkages 20, 21. Moreover, if it is desired to lower the auxiliary table plate 10, the control plate 60 is moved to actuate the pump 50. A slight force is applied to the auxiliary table plate 10 until it achieves to a predetermined position. By this operation, the elevation of the auxiliary table plate 10 is adjusted. Furthermore, by the action of the telescopic
10 pressure pump, the power applied by the user is saved.

The present invention is thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the present invention, and all such modifications as would be obvious to one skilled in the art are
15 intended to be included within the scope of the following claims.